

Claims

- [c1] 1. A controlling device of a compressor, comprising: a commercial power source; a motor, for driving a compressor mechanism; an inverter circuit, for converting a commercial frequency to a driving frequency, to control the motor; and a noise filter, arranged at an input of the inverter circuit, for suppressing a common mode noise of the commercial power source and the inverter circuit, and connected to a ground through a metal frame used for receiving a compressor main body, and wherein the noise filter further comprises first capacitors, connected between AC power lines; second capacitors, connected among the AC power lines in series; and common mode reactor coils, connected among the first capacitors and the second capacitors; and a leakage current suppressing circuit, having a clamper for clamping a voltage, and connected between nodes of the second capacitors and the metal frame.
- [c2] 2. The controlling device of claim 1, wherein the clamper in the leakage current suppressing circuit is formed by opposite connected Zener diodes.
- [c3] 3. The controlling device of claim 2, wherein a Zener voltage of the Zener diode is set within a range from 10V to 30V.
- [c4] 4. A controlling device of a compressor, comprising: a commercial power source; a motor, for driving a compressor mechanism; an inverter circuit, for converting a commercial frequency to a driving frequency, to control the motor; and a noise filter, arranged at an input of the inverter circuit, for suppressing a common mode noise of the commercial power source and the inverter circuit, and connected to a ground through a metal frame used for receiving a compressor main body, and wherein the noise filter further comprises first capacitors, connected between AC power lines; second capacitors, connected among the AC power lines in series; and common mode reactor coils, connected among the first capacitors and the second capacitors; and a leakage current suppressing circuit, having a clamper for clamping a voltage, connected between nodes of the second capacitors and the metal frame; and a third capacitor, connected to the clamper in parallel.
- [c5] 5. The controlling device of claim 4, wherein the clamper in the leakage current

suppressing circuit is formed by opposite connected Zener diodes.

[c6] 6. The controlling device of claim 5, wherein a Zener voltage of the Zener diode is set within a range from 10V to 30V.

[c7] 7. The controlling device of claim 4, wherein the capacitance of the third capacitor is set within a range from 470pF to 10000pF.